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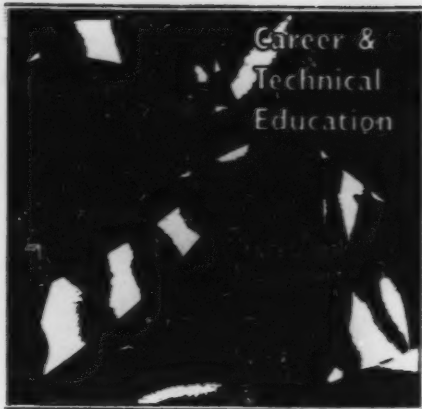
ED 461 770

CE 082 922

AUTHOR Bartlett, James E., II
TITLE Preparing, Licensing, and Certifying Postsecondary Career and Technical Educators.
INSTITUTION National Dissemination Center for Career and Technical Education, Columbus, OH.
SPONS AGENCY Office of Vocational and Adult Education (ED), Washington, DC.
PUB DATE 2002-02-00
NOTE 39p.; Paper prepared for the National Career and Technical Teacher Education Institute (Scottsdale, AZ, February 6-9, 2002).
CONTRACT VO51A990004
AVAILABLE FROM NDCCTE Product Sales Office, Ohio State University, 1900 Kenny Road, Columbus, OH 43210-1090 (Order code: PD2002; \$7.50 plus \$5 shipping). Tel: 800-678-6011 ext. 24277; Tel: 614-292-4277; Fax: 614-688-3258; Fax: 614-292-1260; e-mail: ndccte@osu.edu. For full text: https://www.nccte.org/publications/infosynthesis/r&dreport/PrepairingAll_Bartlett.pdf.
PUB TYPE Information Analyses (070) -- Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Educational Certificates; Nontraditional Education; *Postsecondary Education; *Professional Development; *Teacher Certification; Teacher Competencies; *Teacher Education; Teacher Education Curriculum; Teacher Qualifications; Teachers; *Vocational Education; *Vocational Education Teachers
IDENTIFIERS *Career and Technical Education

ABSTRACT

The field of career and technical (CT) education does not have just one universal set of procedures for licensure or certification of postsecondary teachers. Procedures differ widely from state to state. Most postsecondary CT educators are not required to complete a teacher certification program and then be awarded a license to teach from the state. CT educators must be experts in the technical and the teaching and learning areas. Arguments against postsecondary certification are a policy inconsistent with other higher educational institutions and reduced access to prospective teachers in community and technical colleges. A benefit of licensure and certification is assurance that faculty members achieve minimal standards. CT educators can enter the field from either a technical skills or teaching/learning background. Pathways to develop knowledge of teaching and learning are traditional or online courses; mentorships; professional development activities; student teaching, teaching internships, induction; work experience; and industry internships. Technical experience can be obtained through traditional or distance courses; work experience; and professional development activities. The postsecondary instructor should continue his/her own professional development. New ways and processes to provide qualified CT teachers are a virtual learning environment and multiple methods for assessment. (Contains 56 references.) (YLB)



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Preparing, Licensing, and Certifying Postsecondary Career and Technical Educators

James E. Bartlett, II

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This paper was prepared for the 2002 National Career and Technical Teacher Education Institute
National Dissemination Center for Career and Technical Education
The Ohio State University

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**Preparing, Licensing, and Certifying Postsecondary
Career and Technical Educators**

James E. Bartlett, II
University of Illinois, Urbana-Champaign

A Paper Prepared for the 2002 National Career and Technical Teacher Education Institute
“A Call for Renaissance in Career and Technical Teacher Education”
Scottsdale, Arizona
February 6–9, 2002

**National Dissemination Center for Career and Technical Education
The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210**

**Supported by
The Office of Vocational and Adult Education
U. S. Department of Education**

2002

Funding Information

Project Title:	National Dissemination Center for Career and Technical Education	National Research Center for Career and Technical Education
Grant Number:	VO51A990004	VO51A990006
Grantees:	The Ohio State University National Dissemination Center for Career and Technical Education 1900 Kenny Road Columbus, Ohio 43210	University of Minnesota National Research Center for Career and Technical Education 1954 Buford Avenue St. Paul, Minnesota 55108
Directors:	Floyd L. McKinney	Charles R. Hopkins
Percent of Total Grant Financed by Federal Money:	100%	100%
Dollar Amount of Federal Funds for Grant:	\$2,237,615	\$2,237,615
Act under which Funds Administered:	Carl D. Perkins Vocational and Technical Education Act of 1998 P. L. 105-332	
Source of Grant:	Office of Vocational and Adult Education U. S. Department of Education Washington, D.C. 20202	
Disclaimer:	The work reported herein was supported under the National Dissemination for Career and Technical Education, PR/Award (No. VO51A990004) and/or under the National Research Center for Career and Technical Education, PR/Award (No. VO51A990006), as administered by the Office of Vocational and Adult Education, U.S. Department of Education. However, the contents do not necessarily represent the positions or policies of the Office of Vocational and Adult Education or the U.S. Department of Education, and you should not assume endorsement by the Federal Government.	
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PREPARING, LICENSING, AND CERTIFYING POSTSECONDARY CAREER AND TECHNICAL EDUCATORS

The purpose of this paper is to synthesize the literature that is available on preparing, licensing, and certifying postsecondary career and technical educators. In addition, the paper sought to discuss various methods that could be used to prepare, license, and certify postsecondary career and technical educators. After examining the literature in the areas of preparing, licensing, and certifying career and technical educators, it can be seen that the majority is at the secondary, not postsecondary, level. Furthermore, when trying to identify the basic requirements of each state for postsecondary career and technical education (CTE) teachers, it became evident that this information is not readily available, and is sometimes even confusing within states. With these concerns identified, the author wants to state up front that empirical evidence to clearly guide CTE administrators, college faculty, and policymakers on preparing, licensing, and certifying postsecondary career and technical educators is lacking. This paper presents an overview of the information that was available and presents methods that could be used—and would definitely need to be examined through a systematic research plan—to examine the impact on student achievement.

Career and technical education (CTE) administrators at the postsecondary level are challenged to fill faculty vacancies with individuals who are prepared and qualified to deliver CTE instruction. Indeed, this is not a new problem for CTE. In 1985, Erekson and Barr reported that at the secondary-level, provisional certificates were being issued to relieve the shortage of occupational skills teachers. Since then, programs for alternative and emergency certification have grown, and in 2000, Ruckel reported that 115 programs exist in over 40 states, and more than 250 colleges are involved in some type of alternative certification program. These findings suggest filling classrooms with qualified teachers is not only problematical for CTE positions, but for many fields within education.

The responsibility of filling these positions will continue as an increasing concern, with the escalating shortage of teachers in CTE fields (Wright, 2001a). With a lack of licensed teachers available to fill positions in the secondary schools, many alternative options are being pursued to qualify teachers to enter the classroom. These challenges not only face secondary career and technical educators, but also affect other levels of education, such as community and technical colleges.

The field of CTE is faced with the charge to place qualified instructors into the postsecondary classroom. Career and technical teacher preparation programs have reported a shortage of teachers and a reduction in the number of programs across the nation (Lozada, 1999). In 1994, Lynch reported that colleges and universities in the United States have decreased their capacity to train teachers for the CTE field. As a consequence of the reduction of programs, Lynch (1994) stated the enrollment of students in career and technical teacher preparation programs has also declined. These factors have caused the elimination of CTE teacher preparation programs across the nation. In turn, this will have a bearing on the number of individuals who seek to pursue a degree to teach CTE at the secondary and postsecondary levels.

An examination of the *Occupational Outlook Handbook* (2000–01) shows the fastest growing careers are in CTE areas. Many of the fields included within the high-pay areas that have growth potential are computer support specialists, registered nurses, secondary teachers, computer programmers, police patrol officers, paralegals and legal assistants, commercial artists, and medical and health service managers. In addition, other CTE areas are experiencing high growth, including database administrators, personal care and home health care aides, medical assistants, physician assistants, data processing equipment repairers, health information technicians, physical therapy assistants and aides, and dental assistants. These forecasts, combined with the associate degree being the projected education and training in highest demand from 1998 to 2008, will cause an even greater demand for teachers at the community and technical college level (U.S. Department of Labor, 2001).

Properly prepared and qualified CTE instructors are needed to educate and train students to be productive in many of the careers that are showing growth trends for the future. Faculty in CTE must have competence in the technical field, as well as the field of teaching and learning. Degree programs, many traditional in nature, are available to prepare career and technical educators to enter the classroom. Yet, despite these conditions, community and technical colleges are still challenged to acquire career and technical educators who are prepared. In addition, it is challenging for qualified faculty in CTE to stay abreast of changes in their fields.

DEFINITION OF TERMS IN PREPARATION, LICENSURE, AND CERTIFICATION OF CAREER AND TECHNICAL EDUCATORS

It is imperative before the discussion of certification and preparation to understand the key terminology. Even though sometimes used interchangeably, many definitions are very different in meaning. The following provides definitions for the terms; however, the author wants to specifically present the concern that the terms of licensure and certification are hard to differentiate among.

Accreditation... “the peer review process that schools, colleges, and universities undergo to determine whether an institution or program offering teacher preparation meets or exceeds professional standards of educational quality. Engineering, law, architecture, social work, psychology—all of the preparation programs in these professions are evaluated by their respective accrediting body.” (National Teacher Recruitment Clearinghouse, 2001b, p. 1)

Career Clusters... “The U.S. Department of Education’s...way for schools to organize instruction and student experiences into 16 broad categories that encompass virtually all occupations from entry through professional levels.” (U.S. Department of Education, Office of Vocational and Adult Education, 2001, p. 1)

Certification... “in the education field means something more than licensure; it means having qualifications beyond those required for a license...certification is the process by which a non-governmental agency or association grants special professional recognition to an individual who has met certain predetermined qualifications.” (National Teacher Recruitment Clearinghouse, 2001b, p. 1)

Licensure... “the official recognition by a state governmental agency that an individual meets state-mandated requirements and is, therefore, approved to practice as a professional in that state.” (National Teacher Recruitment Clearinghouse, 2001b, p. 1)

National Board for Professional Teaching Standards... “an independent, nonprofit, nonpartisan organization has established a national, voluntary system to assess and certify teachers who meet high and rigorous standards for what accomplished teachers should know and be able to do.” (National Teacher Recruitment Clearinghouse, 2001b, p. 1)

LICENSURE AND CERTIFICATION PROCEDURES FOR POSTSECONDARY CAREER AND TECHNICAL EDUCATORS

Within the field of CTE, there is not just one universal set of procedures that are used for licensure or certification of all postsecondary teachers. From reviewing the literature on postsecondary licensure, it can be seen that the procedures differ widely from state to state. In some states, policies are nonexistent. In other states that have policies, the requirements are set by varied groups, including the regional accrediting agencies, local education agencies, state agencies, or a mixture of both state and local groups. Even in many of the states that have requirements, many are vague, hard to identify, and difficult to locate. With this said, it is apparent that individuals who are seeking to become postsecondary career and technical educators are challenged to identify how to enter the profession.

Some of the state and local education agencies have other standards in place for career and technical educators, instead of licensure and certification. These standards are the skills that career and technical educators should possess. However, in some instances, these standards are optional, and in other instances they exist but are not strictly enforced.

While most secondary career and technical educators must complete a teacher certification program and are then awarded a license to teach from the state, most postsecondary career and technical educators are not required to do so. In addition, there is an opportunity for the secondary career and technical educator to complete an optional national non-university certification administered by the National Board for Professional Teacher Standards (2001). This certification organization has identified standards for career and technical educators' knowledge of teaching and learning. This type of certification helps ensure that a teacher has teaching and learning skills considered necessary to be a master teacher.

Teaching/Learning and Technical Knowledge Areas for Career and Technical Educators

From reviewing the literature in CTE, it is apparent that career and technical educators must be experts in two distinct areas. The teacher must be an expert in the technical area, as defined by the career cluster such as agriculture and natural resources, architecture and construction, arts, a/v technology and communication, business and administration, education and training, finance, government and public administration, health science, hospitality and tourism, human services, information technology, law and public safety, manufacturing, retail/wholesale sales and service, scientific research/engineering, transportation, and distribution and logistics. In addition to technical competence, knowledge is needed in the area of teaching and learning.

Since postsecondary career and technical educators work with students that range from just out of high school to adults, they need to be experienced in both pedagogy and andragogy. Knowles, Holton, and Swanson (1998) differentiated andragogy and pedagogy by stating "the concept of an integrated framework of adult learning for which the label andragogy had been coined to differentiate it from the theory of youth learning, pedagogy" (p. 58). In addition to the knowledge of learning theories, teachers should have an understanding of development of curriculum and instruction, delivery of instruction, assessment of students, and evaluation of

programs. When preparing postsecondary CTE community and technical college faculty, it is critical that all of these elements are addressed.

To implement an approach that uses various methods to prepare, license, and certify career and technical educators, it is important for the CTE field to use standards to measure the desired educational outcomes for those individuals. These standards need to be developed for both the technical and teaching and learning areas. The *technical* area standards can be developed within each profession in the career clusters areas. Currently, the National Skills Standards Board (2001) is in the process of developing skills standards for many of the CTE career cluster areas. The *teaching and learning* standards can be developed across all areas of CTE and use a process similar to the National Skills Standards. The standards can be used to help assess whether CTE faculty have met certain competencies and that they are qualified and prepared to teach.

Variety of Entry Levels into the Field of Postsecondary Career and Technical Education

One major concern when discussing the preparation, licensure, and certification of postsecondary career and technical educators is the varying entry points and educational levels of new entrants into the profession. The National Teacher Recruitment Clearinghouse (2001b) reported teachers make career decisions to enter the profession when they were in middle school, high school, during their college years, or even later. Many individuals that enter the field of postsecondary CTE are making mid-point career changes, and some even enter the field after retiring from their careers (National Teacher Recruitment Clearinghouse, 2001a).

Fugate and Amey (2000) reported career paths for the community college faculty member as primarily non-traditional. Similar to this, Furniss (1981) stated that few community college faculty entered college to pursue a career as a community college faculty member. Furthermore, it is important to understand factors that draw individuals to become a community college faculty member. In a recent study, Fugate and Amey (2000) stated the factors as: (a) the tenure process at a 4-year institution could be avoided, (b) the community college matched their career desire to teach, (c) a terminal degree was not needed, and (d) many of the faculty members had attended community colleges. Consequently, individuals enter positions as community college faculty for multiple reasons and with a variety of education levels—ranging from a high school diploma to a terminal degree. Since entry backgrounds are so varied, this is a rationale for developing several methods to prepare and certify career and technical educators.

With such a variety of entry points, a flexible plan is needed that will still enable community and technical colleges to fill vacancies with the best individuals. It would seem reasonable for these individuals to have, at minimum, a baccalaureate degree similar to that of most secondary career and technical educators. However, some individuals with exceptional work experiences could be an asset to students, and may not need to meet this requirement.

Other factors, such as certification agencies, may also relate to the entry-level requirements of the CTE teachers. For example, the Southern Association of Schools and Colleges request that faculty hold a degree one level above the level of the students they are teaching. In some instances, the regional accrediting agencies require teachers to hold a masters degree for their courses to be transferable, though many courses in associate degree programs have not traditionally been transfer-credit generating, anyway. Further research is needed to examine the

educational level of CTE faculty and the impact of educational level on student achievement. These findings can be used to suggest changes in policies relating to the educational levels required of the CTE instructors.

Past Practices for Certifying Postsecondary Career and Technical Educators

In the past, most teacher preparation, licensure, and certification policies have been examined in terms of secondary teacher education. There is a dearth of literature on postsecondary CTE preparation, licensing, and certification due to the lack of licensing and certification at the postsecondary level, in general. Some states have reported having standards or certification for CTE in place; however the guidelines are not available nor were they standardized for use in other states. In some instances, these practices varied from one local agency to another within a state. In California, for example, the standards were different at the local levels.

The literature review only found one national study that explored certification of teachers in community colleges. This national study was conducted in 1994 by the State Board of Directors for Community Colleges of Arizona. This study surveyed all of the state community college directors and reported having a 74% ($n=37$) return rate. Of the responding states, the majority (78.4%, $n=29$) did not have certification requirements for postsecondary career and technical educators; 10.8% ($n=4$) reported having state certification, 8.1% ($n=3$) reported having a local certification, and 2.7% ($n=1$) reported having another type of certification procedure, which was not specified. When contacted, the organization was unable to produce a list of states that had certification.

In the same study, community and technical colleges were asked if they had standards in place for career and technical educators. Almost half of the respondents (45.9%, $n=17$), reported that they had no set standards for career and technical educators. Twenty (54.1%) respondents reported having set standards. Thirteen (35.1%) of all respondents indicated that standards are set at the state level, and 8.1% ($n=3$) indicated that standards were set at the local level. Two respondents (5.4%) reported having standards set at both state and local levels. In addition to this, 2.7% ($n=1$) reported that the state standards were optional and 2.7% ($n=1$) reported having standards that were set by other means; however, that method was not specified.

From the examination of these findings it can be seen that the majority of career and technical educators at the postsecondary level do not have certification. Also, it is evident that a large percentage of the postsecondary administrators do not have set standards to follow when filling vacant positions. These past practices can be seen as minimal, at best.

Current Procedures for Licensing and Certifying Postsecondary Career and Technical Educators

The current procedures for licensing career and technical educators vary greatly. In some states, the same procedures are required for all community and technical college teachers to enter the classroom. In other states, these procedures are for individuals only in the CTE areas. In Louisiana and Arkansas, postsecondary faculty members in some CTE areas are required to complete an occupational competency test or hold occupational credentials. Examples of occupational credentials are Airframe and Powerplant certification from the Federal Aviation

Administration, Certified Systems Engineer from Microsoft Corporation, and the American Welding Society certification.

The picture that forms when examining these procedures is unclear and inconsistent. The procedures that an individual would need to follow to make a transition from the work force to the classroom are not easy to locate and interpret. With inconsistencies from state to state, and even within states, ease of entry into teaching in a postsecondary career and technical education area is a concern.

Examples of State Policies and Procedures

The following are some examples of requirements for licensure in states that have set policies and procedures for postsecondary CTE faculty. These examples are from the states that have the most detailed information available. Arizona and Iowa both require licensure of all community college teachers—in both career and technical areas and in arts and science areas.

Iowa requires that all community college teachers in the career and technical areas have 3 years or 6,000 hours of work experience in the technical area. In many cases, individuals entering these programs have a variety of educational backgrounds. In addition to bringing work experience, new teachers must complete a new teacher workshop—within the first year of, and preferably before, teaching. The teachers are then required to take a course in curriculum development, instructional methods, measurement and evaluation of programs and students, foundations of vocational education, and an Iowa-approved course on interpersonal relations. The new teachers are given 5 years to meet these requirements. Gary Borlaug (personal communications, August, 20, 2001), a state licensing expert for Iowa, pointed out the new career and technical educators like the experience of gaining knowledge in the teaching area, and feel that it helps prepare them to be better qualified educators.

Arizona has different requirements for the licensure of career and technical educators, depending on the educational level of the instructor. For Regular Certification, an individual without an associate degree must have 64 credit hours in the CTE field and 5 years of work experience in the field, or be currently licensed or certificated in the field, and complete a course on the community college system. For individuals with an associate degree to obtain a Regular Certificate, they must have 5 years' experience in the field or hold a current license or certificate in the field, and complete a course on the community college system. Individuals who hold a bachelor's degree in the field must complete a course about the community college system and have 3 years of work experience in the field. Individuals with a master's degree are required to have 24 upper-division and/or graduate credits in the teaching field and complete a course on the community college system. Each of these Regular Certificates is good for 6 years and require a fee of \$50.

An additional Lifetime Certificate is available for individuals who hold a master's degree, and this certificate requires 18 graduate semester hours in the teaching field and the completion of a course on the community college system. The fee for this certification is \$65 and is good for life.

Also in Arizona, Provisional and Special Certificates are available for individuals who do not meet the requirements for Regular Certification. The Provisional Certificates are issued for 2 years, and allow an individual to be a full- or part-time instructor. The Special Certificate can be issued for 2 years without the completion of the community college course, or for 6 years if the instructor completes the course on the community college system. The Special Certificate allows the instructor to teach only on a part-time basis. A complete table of the requirements for occupational teaching fields is available from the State Board of Directors for Community Colleges of Arizona (State Board of Directors for Community Colleges of Arizona, 2001).

Minnesota offers licensure for career and technical educators who are affiliated with schools in the Minnesota State College and University System. License fields include agriculture, business & office, counselor, general education, general studies, health, marketing, service, technical, trade & industry, and new licenses. The minimum qualifications are specific to each field, but may include educational, occupational, professional, and other requirements. The requirements for full- and part-time faculty may be different. Career and technical educators must complete a Teacher Education Series (TES) core, including courses on the introduction to vocational education, student and trainee evaluation systems (vocational tests and measurements), course development (course construction), instructional methods (methods of teaching vocational subjects), and the philosophy and practice of vocational education. For the initial licensure, the individual must complete the introduction to vocational education course, whereas an applicant with an education degree is exempt from that initial requirement. Instructors have a time frame of 5 years to complete the other required courses.

In addition, in Minnesota, paid occupational experience requirements must be met by prospective postsecondary CTE faculty. Two thousand hours of paid work experience during the previous 5 years, outside of teaching, is needed. Teaching experience, in the previous 5 years, in a postsecondary field may be substituted for up to 1,500 hours of work experience at the ratio of 2 hours' teaching experience for 1 hour of work. Some additional alternatives or substitutions are allowable for the work experience, including self- or family-employment, military experience, directed occupational experience, pre-approved internships, and competency-based exams. In some fields, the minimum qualifications include professional requirements, in addition to the above minimum standards. License renewal requirements involve a local renewal committee and procedure. Currently, an emergency license and new program license are also offered (Minnesota State Colleges and Universities, 2001).

Other states have certification for specific CTE areas. For example, in Louisiana and Arkansas, postsecondary CTE faculty are required to pass a National Occupational Competency Test. This test covers only occupational, not teaching, competency (National Occupational Competency Testing Institute, 2001). The assessments from this organization are used for teacher, business/industry, and student testing, to certify an individual as competent in a specific field.

Regional and Other Accrediting Agencies

The Council for Higher Education Accreditation (CHEA) regional accrediting agencies have standards that institutions must meet to become and remain accredited (Council for Higher Education Accreditation, 2001). In each of the regions, various standards are identified for

faculty. It should be noted that many of the documents obtained from the regional agencies were not discussed in quantitative terms and appear open to qualitative interpretation.

The Middle States Association of Colleges and Schools, North Central Association of Colleges and Schools, Northwest Association of Schools, Colleges, and Universities, and the Western Association of Schools and Colleges standards for CTE faculty are not easily quantifiable or measurable in regard to the specific qualifications that faculty must meet. The Middle States Association standards indicate that faculty should be academically prepared and qualified. The North Central Association standards identify that faculty should possess educational credentials that testify to appropriate preparation for the courses they are teaching. The Northwest Association states that faculty should be professionally qualified. The Western Association has a separate accrediting agency for community and junior colleges. This agency states that an institution must have a sufficient number of faculty members who are qualified by appropriate education, training, and experience to support its programs and, in all cases, these standards are not easy to interpret and appear to provide the institution with much flexibility (Middle States Association of Colleges and Schools, 2001; North Central Association of Colleges and Schools, 2001; Northwest Association of Schools, Colleges, and Universities, 2001; Western Association of Schools and Colleges, 2001).

The Southern Association of Colleges and Schools criteria were more quantifiable—the highest degree for the CTE instructor must be from a regionally accredited school, or the institution must provide evidence of academic preparation. The faculty member must be proficient in oral and written communication for the language in which the course is being taught. For courses that are identified as transferable, the faculty member must have 18 credit hours in the discipline and hold a master's degree, or hold a master's degree in the discipline. For courses that are not transferable, the minimum requirement is a degree at the same level being taught, plus work experience. For individuals with outstanding professional experience, this can be waived. For non-degree programs or certification programs, the faculty member must have competency in the subject, and this can be gained from work experience. While these standards for non-degree and certification programs may vary, the requirements are defined by each institution. For individuals teaching basic computation or communication skills in non-degree or certification programs, a baccalaureate degree and, ideally, work experience related to the occupation are required (Southern Association of Colleges and Schools, 2001).

The New England Association of Schools and Colleges has the same qualitative criteria as many of the other regional agencies and, additionally, it has quantifiable criteria. The minimum academic credential is a degree one level above the level being taught. A master's degree is the minimum qualification for general education courses being taught at an upper level or 2+2 program (grades 13–14 + 15–16). This regional accrediting agency also allows substitutions for the minimal criteria, such as scholarship, advanced study, creative activities, relevant professional experience, training, and other credentials such as licensure or professional registration (New England Association of Schools and Colleges, 2001).

Another agency that postsecondary programs need to take into account when considering accreditation concerns is the National Council for Accreditation of Teacher Education (NCATE). The NCATE standards require that faculty model best professional practices in scholarship, service, and teaching, including the assessment of their own effectiveness. In addition, the unit in

which certification is taking place must systematically evaluate faculty performance and faculty professional development. These standards are of special importance when the community or technical college participates in teacher preparation (National Council for Accreditation of Teacher Education, 2001).

It can be seen from the current practices of the regional accrediting agencies that the standards can be vague and hard to measure. In addition, many of the agencies provide alternative methods for institutions to allow faculty who do not meet the set standards to still teach.

Best Practices for the Certification and Licensing of Postsecondary Career and Technical Educators

Without further empirical evidence, it is difficult to identify the practices that are best for the preparing, licensing, and certifying of postsecondary CTE faculty. Further study is needed to determine if the practices of the current programs are having an impact on student learning. What can be determined from the limited availability of current practices are the following three similarities in policies and procedures where certification and licensure is taking place.

- The policies and procedures are flexible due to the varied levels of education and experience postsecondary educators have upon entry into the field.
- The policies and procedures include an educational component that helps develop skills in the area of teaching and learning.
- The policies and procedures include a technical-content component that ensures individuals have the technical knowledge to teach in the specific licensed area.

ARGUMENTS FOR AND AGAINST LICENSURE AND CERTIFICATION OF POSTSECONDARY CAREER AND TECHNICAL EDUCATORS

When exploring the topic of licensure and certification of postsecondary teachers, it is critical to examine how policies could be advantageous, as well as what negative aspects might be present, or result. In 1994, the State Board of Directors for Community Colleges of Arizona provided insight for reasons to discontinue and to retain certification for community college faculty. These and additional views will help frame a forthcoming discussion of arguments for and against licensing and certifying postsecondary career and technical educators.

Reasons for Not Having Licensure and Certification

From the literature, it is evident that postsecondary teacher licensure and certification is not done by the majority of states. With licensure and certification not being required in most states, it is questionable if it should be pursued. If it is not being done now, many ask why it would be needed in the future.

An argument against postsecondary certification is that this policy would not be consistent with other higher education institutions that do not require faculty to be certified. In some states, the institutions that deliver postsecondary CTE are governed by the same agency that governs higher education in the state. However, in other states, the community and technical colleges have their own boards and this argument may not be as valid.

In higher education, many local institutions, colleges, and departments develop and implement their own standards. This provides flexibility to serve the local needs and the local mission of the institution. In these cases, standards are not mandated by a state or federal agency. Within postsecondary CTE, technologically oriented programs have developed rapidly, and this type of local control promotes flexibility and allows program changes appropriate for their constituents. Aligned with this argument is the concern that each institution should be relying on the professionals in the organization to implement the standards. For this argument to be valid, each institution must have specific standards to follow when evaluating the postsecondary career and technical educator.

The peer review process also serves as a method to monitor standards (Centra 1987, 1993; Gould 1991; Keig & Waggoner, 1994; Shaughnessy, 1994). This peer-review process is typically conducted in higher education for the purpose of tenure and promotion. Having a peer-review process may eliminate the need for certification. However, many faculty members in postsecondary CTE teach part-time and may not be subject to a peer-review process. For other faculty who participate in the peer-review process, it is essential that the evaluations measure if the standards are being met.

The implementation of certification may reduce access to prospective teachers in community and technical colleges. With many faculty members coming from business and industry, and serving part-time, the requirement of certification is a real concern for administrators when filling positions. However, with certification requirements, this concern could be overcome with flexible alternatives.

Another argument for not having licensure and certification is that regional accrediting agencies are currently setting standards to make this unnecessary for postsecondary career and technical educators. The criteria set by the regional accrediting agencies define the criteria the CTE teacher must meet. In many cases, the regional accrediting agencies have standards in place, but not all institutions are required to follow them. For example, a community or technical college may not need accreditation by the regional agency. In other cases, some of the regional agencies' criteria are less quantitative, hard to interpret, and standards have not been developed for CTE faculty.

Reasons for Supporting Licensure and Certification

Even with the drawbacks of implementing licensure and certification, there are other rationale for postsecondary career and technical educators to participate. One benefit of licensure and certification is to assure that faculty members achieve minimal standards for both the technical content and teaching and learning areas. By mandating the postsecondary career and technical educator be licensed and certified, institutions could more easily show that their faculty are meeting standards set by state and regional accrediting agencies.

The certification process, if developed correctly, could be self-supporting. Arizona has reported having a certification process for community college teachers that is completely self-supporting, financially. The process of licensure and certification should be developed so the process is financially self-supporting, or at least be moving in that direction. Even though this may not be an argument for implementing the process, it does provide support.

These proposed ideas provide thoughts for both supporting licensing and certifying postsecondary career and technical educators, and reasons to eliminate or continue without the process. Currently, there is limited literature that provides empirical evidence to back licensing and certification at the postsecondary level for CTE. The methods presented in the following sections are possibilities to offer postsecondary teacher preparation, licensing, and certification. The integration of the methods could serve as multiple paths to prepare individuals to enter the field as a postsecondary career and technical educator. These methods would need to be pilot-tested and evaluated, to examine their impact on faculty and student achievement.

MULTIPLE PATHS FOR PREPARING, LICENSING, AND CERTIFYING POSTSECONDARY CAREER AND TECHNICAL EDUCATORS

When considering the pathways in Figure 1, it must be remembered that postsecondary career and technical educators will have varying levels of expertise when entering the field. The figure shows individuals entering the field from either a "Technical Skills" or "Teaching/Learning" background. Flexibility is required when developing students from diverse backgrounds. The specific pathway for preparing, licensing, and certifying a postsecondary career and technical educator is not as important as the desired knowledge, skills, and abilities the future faculty member should obtain. As can be seen in Figure 1, these multiple preparation methods toward becoming a career and technical educator do not suggest a specific ending point, as learning should continue throughout the CTE professional's lifetime. A desired outcome can be met by the postsecondary students in both technical content and teaching and learning in a variety of forms. The illustrated pathways and methods for learning take these ideas into consideration and integrate them into the development of postsecondary CTE faculty.

A limitation of using multiple flexible methods in developing CTE faculty, is that specific standards for the CTE career clusters and specific programs need to be integrated into the assessment of the faculty. To assess faculty knowledge within the technical content areas, standards, such as those of the National Skills Standards Board (NSSB) or other national skills standards for content areas, must be used in the evaluation (National Skills Standards Board, 2001). The same development of standards is needed for the teaching and learning competencies for the postsecondary career and technical educators. Another standards resource is a book entitled "Skill Standards for Professional-Technical College Instructors and Customized Trainers" (Goldstein and Navone, undated); it was developed by master community-college teachers, and outlines skills, technical knowledge, and performance criteria for career and technical instructors.

Methods for Preparing the Postsecondary Career and Technical Educator

This section provides an overview of methods that can be used to prepare, license, and certify postsecondary career and technical educators. As in many fields of education, individuals may decide to enter the postsecondary CTE field at numerous stages—pre-college, during college, after an associates, bachelor's, master's, or doctoral degree, or after working in the CTE field. Individuals with such a wide range of backgrounds will possess a wide range of credentials—ranging from no degree to a terminal degree. These pathways provide methods for all of these individuals to develop technical content and teaching and learning content to become prepared, licensed, and certified to teach in a postsecondary career and technical program. At this time, empirical evidence has not been provided to support which of these points of entry is better, or if a minimum level of education should be met before teaching in the postsecondary CTE classroom. With this said, the current pathways do not set or even suggest limitations to education prior to entry—enabling individuals with varied backgrounds the option of becoming CTE faculty.

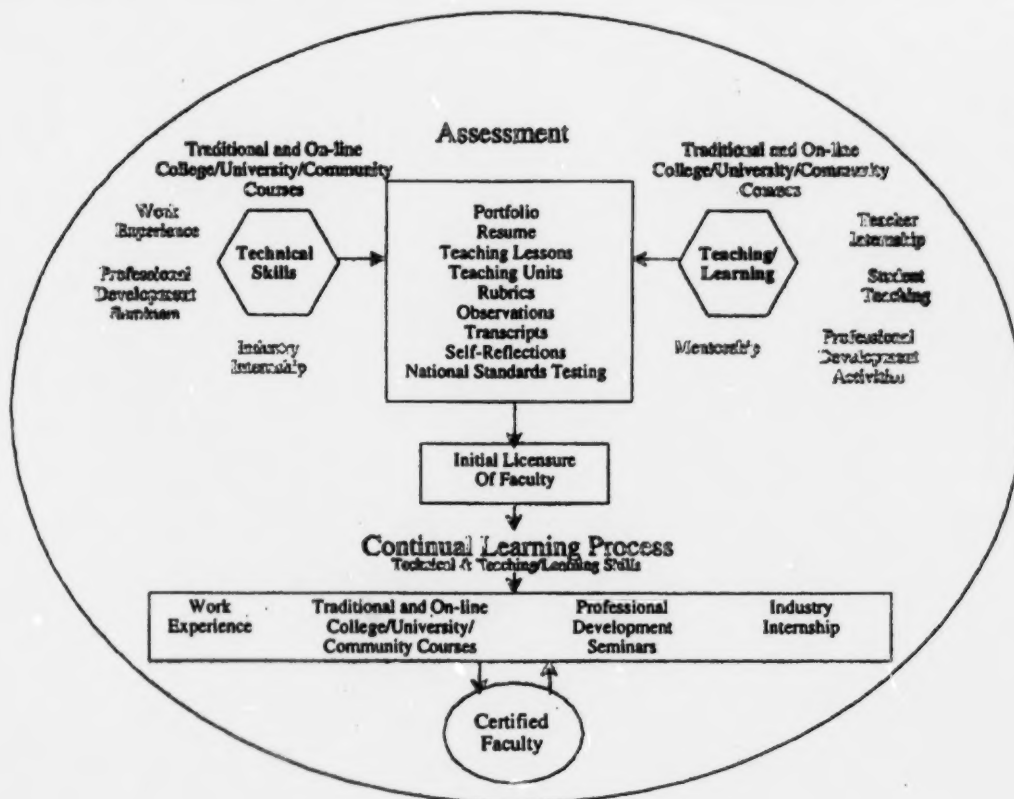


Figure 1. Multiple pathways for developing postsecondary CTE faculty.

Skill Base Needed for CTE Postsecondary Faculty

In the areas of teaching and learning and technical content, standards are needed to assess postsecondary instructors. The standards in teaching and learning can be similar for all CTE areas. For example, Lozada (1999, p. 12) reported that "all of Virginia Tech's career and technical teacher education students take their core classes together (such as those that focus on teaching pedagogy)." The technical content standards, however, will be different for each career cluster, and more specifically for each area within clusters. The NSSB has developed national standards for many of the CTE areas (National Skills Standards Board, 2001). In addition, the NSSB and the National Centers for Career and Technical Education both serve as repositories for standards for the career cluster areas. For example, the repository provided direction to the National Business Education Association, toward locating standards for business education teachers (National Business Education Association, 2001).

Teaching and learning

No single, specific course, sequence, or method that prepares an individual to be an extraordinary teacher when they enter the classroom. If this were the case, everyone would use the same prescribed methods to prepare all teachers to a high level of excellence. To meet the objectives of developing knowledge of teaching and learning, a postsecondary instructor can use many diverse methods. What appears to be consistent in many teacher preparation programs, is that the basic content includes developing curriculum, planning instruction, delivering instruction (teaching and learning styles), assessing students, and evaluating programs (Iowa Department of Education, 2001; Minnesota State Colleges and Universities, 2001; State Board of Directors of Community Colleges of Arizona, 2000). These are typically interwoven throughout the traditional courses, and then integrated within the field experiences. This means most postsecondary CTE faculty without formal teacher preparation do not have a chance to develop professionally in these areas. The pathways to develop competencies do not need to be rigid, as long as it can be shown that the standards are met.

Traditional courses. Traditional courses are one program approach for students to gain knowledge in the teaching and learning area. However, to address the need for flexibility, it is important to think about the options outside of the traditional 4-year university setting. Community and technical colleges already have courses available under the broad scope of teaching and learning. Even though it does not appear to be traditional now, historically, the junior colleges served the needs of preservice teachers (Gerdeman, 2001). For example, in Arizona, community college instructors are required to take a course on community college teaching and learning that is offered through the community college system (State Board of Directors for Community Colleges of Arizona, 1994). Another example is in Allen, Texas, where Collin County Community College offered one of the first technology education teacher certification programs for teachers at the community-college level (Texas Education Agency, 2000). These and other teacher preparation programs are continuously evolving in the community colleges, as they step forward in the role of preparing technical school teachers.

On-line courses. E-learning, using web-based technology, and using the capability of computer networks can provide many opportunities for students to learn. It is important that on-line education not be viewed a lesser alternative, but an equally valued addition for gaining knowledge about teaching and learning. On-line courses should be more than a replacement for the correspondence course. On-line courses should engage students and require active participation. This type of course delivery benefits postsecondary faculty by providing them an opportunity to take a course using a delivery method they may be required to use in their own classroom teaching. An example of a program that does this is the Community College Teaching and Learning (CCTL) Online curriculum at the University of Illinois, Urbana-Champaign. The CCTL is designed to increase the teaching effectiveness of community college faculty and build the instructional leadership of supervisory personnel (University of Illinois, 2001).

Mentorships. A mentorship is another method that enables students to develop competencies in teaching and learning. Harnish and Wild (1994) state that mentors can impact teaching and professional growth of both new and veteran faculty. A mentor can help an individual see how the local school culture can mesh with their knowledge of teaching and learning. A mentor could also serve in the role of providing quality feedback for the teacher when discussing curriculum

development, lesson planning, and assessment techniques. With developed partnerships, the mentorship could include observation and feedback on teaching for both the new teacher and master teacher. The mentorship could also provide the new teacher with a chance to reflect on their own practices. If structured correctly, the mentorship could be completed in conjunction with an educational institution for credits towards licensure and certification.

Professional development activities. Career and technical educators must continue to learn, just like all professionals, once they exit the classroom. Anglin and Mooradian (1992) reported that community colleges institutional and individual certification renewal can be met with professional development programs. One method for learning is to participate in teacher professional development activities. Career and technical organizations at the local, state, regional, national, and international level offer opportunities throughout the year to participate in activities designed to develop teaching and learning skills. Teachers working on preparation, licensure, and certification could attend these as a method to gain knowledge in the area of teaching and learning. After attending this type of professional development session, reflections could be conducted to provide documentation of the learning that has taken place. In addition to the learning, these types of activities require the preservice or new postsecondary instructor to model an informal method of learning that can be used for lifelong learning in their profession.

Student teaching, teacher internships, and induction. Student teaching is the traditional manner in which new secondary CTE teachers acquire practical teaching experience. This type of methodology could also be used for postsecondary faculty. Another applied method for postsecondary faculty may be teaching in an internship. With traditional student teaching, the preservice teacher would be able to practice the skills of teaching with the benefit of having a supervisor. The internship would not have to take a specific form for the postsecondary faculty. The internship could be taken for college credit and be paid, but does not have to do either. What is important is that the process is conducted in a manner to encourage learning and is documented. It is important to look outside the traditional form that student teaching and teacher internships have taken in the past and explore new models to help prepare, license, and certify the postsecondary career and technical educators.

A new teacher induction process is another option to provide training to the new faculty. Van Ast (1992) reported this type of experience for new vocational educators lacking education backgrounds. This type of program could provide the new teachers with opportunities to earn credit towards their initial licensure. Talbert (1992) reported that inductions can incorporate a mentoring perspective that requires a substantial time and resource commitment. In addition, the induction experiences are unique, and this requires a need to be general and flexible. For example, the experience and needs of traditionally and alternative certified teachers may be different.

Work experience. Teaching and learning skills may be gained through practical work experience. For example, an individual in a manufacturing setting could have practical work experience as a trainer. In many cases, individuals who have worked in a trainer role already have knowledge in the areas of teaching and learning. Numerous aspects of human resource development (HRD) parallel the teaching and learning skills a career and technical educator would use in the classroom. If these experiences are documented, an individual could be assessed to show that person meets certain standards.

Industry internships. An industry internship to develop teaching and learning skills would be another method to develop instructional skills. Completing an internship in an organization that requires the use of teaching and learning competencies would help the postsecondary career and technical educator develop this skill. Working in the role of a trainer, or some other aspect of HRD, would provide an opportunity to develop skills that could be transferred to the classroom. This type of partnership could provide insights for a CTE faculty member that would be beneficial to both the business and the community college.

Technical area

For the most part, the technical skills of the postsecondary teacher are developed through work experience. However, the career and technical educator can obtain technical experience through other methods, as well.

Traditional courses. Traditional undergraduate and graduate courses are one method that career and technical educators may gain experience in their technical area. These courses can be delivered from a 4-year institution, technical college, or community college. However, it is expensive for institutions to maintain labs and equipment for CTE. In addition to this, as Lynch (1994) stated, many career and technical programs are being reduced. With this stated, it seems reasonable to suggest partnerships that will in the future enable postsecondary faculty and preservice secondary teachers to receive technical content from the technical and community colleges that are also preparing individuals for the technical workplace.

Distance courses. Courses using Internet technologies and other electronic delivery methods are viable methods for students to receive skills in the technical content area. On-line courses are available from universities in many career and technical areas. With recent developments, the use of remote labs that present simulations over the Internet (Alhalabi, Hamza, and Marcovitz, 2001), the use of broadband technologies that allow for synchronous communications, and the increasing availability of technology are removing barriers to distance learning.

Work experience. Work experience is the way many postsecondary career and technical educators receive their technical content expertise. This experience should be valued and used to show competence in the technical area in which they will be teaching. This work experience can be documented through the creation of a portfolio, showing specific projects or tasks completed on the job. Work experience does not always have to take the form of a traditional full-time position. Teachers could take part in industry internships to gain work experience. These internships could be paid or unpaid, and would provide the teacher with practical experience from the workplace. This type of experience would help teachers relate topics to the workplace for their classroom students.

Professional development activities. In many of the CTE areas, professional development seminars are offered to provide technical skills. These sessions could be of varied length and difficulty. Many of these seminars lead to industry certifications. These activities can be documented through the individual's professional portfolio. Many of these professional development activities could allow time and resources for faculty to work on credentialing.

CONTINUOUS LEARNING FOR POSTSECONDARY CAREER AND TECHNICAL EDUCATORS

Even once an individual is initially licensed to teach, learning should not stop. Sydow (2000) reported on the rewards in teaching and learning for community college faculty after the investment in professional development. Career and technical educators need to stay current in their field to ensure their programs are meeting the needs of students and business and industry. Changes within technology and instructional delivery methods are both occurring on a rapid basis. The postsecondary teacher should continue their own professional development, as shown in the following examples. Continual learning can occur from the same methods as initial training, but be used to further develop and update skills of the career and technical educator. The same methods could be used for advanced development of skills and to ensure teachers are up-to-date in both the technical and teaching and learning areas.

Continual Learning and Ties to Career Promotion

In higher education, the faculty member role is traditionally research, teaching, and service. However, at the community and technical college level, the roles of teaching and service are stressed. Palmer (1998) suggested that individuals who strive to reach the highest ranks, such as full professor, seek specialized pedagogical training designed for faculty members. Another method for continuously updating community college faculty would be to have them participate in a rigorous, non-university based certificate process that would provide more visibility and bring recognition to community college instructors. The National Board for Professional Teaching Standards has a similar program available for secondary career and technical educators (Zehr, 1999). Available research shows that professional development in community colleges benefits both the institution and individuals (Sydow, 2000). With this in mind, it would benefit the institution to support professional development and continuous learning. Rifkin (1995) stated that there is a need for constant evaluation that encourages professional development.

Pursuit of Further Development Through Education

Many CTE instructors may wish to pursue a higher degree in their teaching areas. With such varied educational levels at the CTE instruction entry point, instructors may wish to focus their continuous learning efforts on obtaining a degree—at the associate, master's, professional certificate, or doctoral level. This type of program would have students taking courses in either their content area or the area of teaching and learning. For example, Community College Teaching and Learning program at the University of Illinois has individuals from all content areas taking courses on the improvement of instruction.

Further Pedagogy and Andragogy Development and Technical Content

Further development of pedagogy and andragogy are not limited to the formal classroom. CTE instructors can gain these skills from a variety of sources. For example, skills in the area of teaching and learning could be developed through professional development conferences, on-line courses, internships, mentor programs, workshops, or even work experiences. Technical content can be developed in the same manner, and also needs to be continually updated. This would impact national and state level professional organizations by creating a demand for these alternative forms to learn. The organization could play a role in the development and

organization of many of the methods. For example, it would be useful if an organization served as a repository for the multiple methods and sources to develop professional skills for their members.

Benefits of Comprehensive Teaching and Learning Competencies for Postsecondary Career and Technical Educators

Another concern is the expense of providing career and technical preparation programs for all individual career cluster areas. Wright (2001b) has stated that having secondary CTE students learning together helps promote collaboration and saves money. These same collaboration practices—integrating one comprehensive set of teaching and learning competencies for all CTE areas—would help assure the future of career and technical teacher preparation programs. At the same time, students could develop skills in technical content areas in the same courses that are preparing individuals for the workplace. For example, if a local community college has a program for teaching a high-tech skill area, the student could learn that competency there, and also take the courses on teaching and learning at the 4-year institution that may be offering the comprehensive teacher preparation program.

Benefits of National Certification of Postsecondary Career and Technical Educators

The development of a national certification program could bring higher acknowledgment to the field of postsecondary teacher education as a profession. Currently, no national certification program for postsecondary career and technical educators exists. This type of program would not need to be mandatory; however, such a program would provide postsecondary teachers with recognition for obtaining a certain level of excellence in their profession. Teachers seeking such certification could demonstrate their competence through the development of a professional portfolio, and retain certification by continually updating their skills in both the areas of teaching and learning and their specialized content area. An organization such as the National Board for Professional Teaching Standards, which supports the national certification of K–12 teachers, could be responsible for this program.

These teachers could then serve as mentors in the preparation of other teachers in the community and technical colleges. This type of certification would help states show that the postsecondary career and technical teachers achieve at least a minimum level of competence—as can be demonstrated in many other professionals. A national certificate would aid in the development of articulation programs, because all teachers with the certificate would be competent at this specific level. This type of certification could also aid teachers in their mobility and serve as third-party endorsement for promotion reviews.

Proposed Partnership to Support Postsecondary Career and Technical Educators

The development of the proposed methods to prepare, license, and certify postsecondary career and technical educators requires partnerships between educational institutions, businesses, and state-level agencies. If done in the proposed manner, much of the technical content is already in place, and could be gained from community colleges, technical colleges, regional universities, national universities, and HRD sources.

To develop the teaching and learning area of expertise, partnership and collaboration would be beneficial. Once a list of standards is established, it would be necessary to examine the courses already offered and explore how the scope and sequence of courses can be developed. With the growing web-based technologies, geographic and time limitations are overcome. A current web-based course example is the teaching methods course being offered in conjunction with the National Business Education Association (National Business Education Association, 2001).

THINKING OUTSIDE THE BOX IN CTE PREPARATION AND CERTIFICATION

It is important for education to expand beyond the traditional classroom mode. If the field of CTE does not come together and provide alternative approaches to provide the classrooms with qualified teachers, public policy will be created to fill the classroom with a qualified individual so courses can be offered. Thinking of new ways and processes to help teachers meet their goal of having students with high achievement is imperative.

Multiple Paths to a Similar Destination

The goal of preparing, licensing, and certifying a postsecondary career and technical educator is to have a qualified instructor in the classroom that will, in the end, produce students with high achievement. The path to becoming this qualified instructor does not have to be and will not be the same for all individuals. In fact, if one examines theories of learning, it is obvious that different people learn best in different manners. What does need to be identified is the desired outcome or destination of the postsecondary career and technical educator in their knowledge, skills, and abilities.

Virtual Learning Environment

A virtual learning environment is another option that could be put in place to help prepare, license, and certify the postsecondary career and technical educator. Currently, the California State University System has a web-based program to assist elementary teachers who have emergency certificates in completing their certification in approximately 18 months (Schmidt, Selingo, Basinger, 1999). Other teacher certification programs are available for individuals with undergraduate degrees to complete certification (Hirst, 2001). The virtual learning center could provide expertise in the area of teaching and learning, as well as technical content. The virtual learning center would be an excellent method to allow students to stay up-to-date with the changes in their technical content area and in the teaching and learning area. These courses could be offered to satisfy the requirements for the initial license, for continual learning credits, and to stay current in the field.

The virtual learning environment could be developed in the form of a comprehensive website that has a set of courses for the areas of new teacher workshops, teaching in community and technical colleges, curriculum development, methods of instruction, evaluation of programs, assessment of students, and foundations of CTE. Each of these course areas could include introductory and expert course levels. The virtual learning environment could also offer courses in specific content areas under the career cluster areas.

This type of virtual learning environment could provide instruction in both synchronous and asynchronous methods. The material placed in electronic form would allow students to conduct learning on their own time. The synchronous session would provide opportunity for the course instructor and students to interact in real time. The instructor could make multiple simultaneous contacts over the Internet, using web-casting software. And those lessons could become interactive with chat programs such as AOL Instant Messenger, Yahoo Messenger, or ICQ. Other methods, such as using a traditional dial-up phone line, could be used for conference calls between students and instructor. The electronic learning environment would provide the means for students to have live chats, post question, and have discussions on various topics.

The assessment for much of the course material could be done in the form of developing a final portfolio to show that the course requirements have been met. Placing all postsecondary career clusters in the same course for teaching and learning would provide a diverse group of students, to work as a stimulating cohort. Other formative assessment by the instructor and peers in the course could occur on a frequent basis.

Currently, many successful courses in higher education are on-line. To better develop an on-line learning environment, successful models should be assessed for the most relevant parts, to be adopted for new course applications. These methods would provide perspective teachers with positive and productive experiences in e-assisted teaching and learning before entering their own new, or next, classrooms.

Multiple Methods for Assessment

The traditional pencil and paper test is not the only way, and in most cases would not be the best method, to assess postsecondary career and technical educators. The assessment of the teachers can take a variety of forms. This can be seen in Figure 1 by the multiple methods that are suggested for assessment. For example, through the preparation process of the assessment, numerous formative evaluations can take place via on-line methods with programs such as InQsit[®] or other web-based testing software (Bartlett, Melody, & Reynolds, 2000). A summative evaluation such as a professional portfolio would be a viable method for students preparing to be career and technical educators. Other forms of self-reflection could help identify the students' learning. Once the initial licensing requirements have been met, the portfolio could be used to demonstrate in other professional arenas—such as their own classrooms—how the competencies had been met.

Immediate Entry into Classroom

In many cases in higher education, a faculty member may be required to enter a classroom and be a teacher as soon as they are employed, without any experience. This lack of training in pedagogy and andragogy is no different for community and technical college instructors in the career and technical education areas. This immediate entry without any experience in the teaching and learning area is a concern. A new teacher workshop, a teacher induction program, and a mentor would be of value for these individuals. The virtual learning environment could help support these individuals with examples of curriculum materials, a variety of instruction methods and lesson plans, examples of methods to use for evaluation and assessment of programs, and other materials concerning the workings of the community college systems. Other useful material for these new teachers could be information on professional organizations, including program and registration information for local, regional, and national conferences.

CALL FOR RESEARCH TO EXAMINE POSTSECONDARY CTE PREPARATION, LICENSURES, AND CERTIFICATION

The major finding of this research has been the lack of available knowledge, consistency, and organization of the requirements in this country for an individual to become a postsecondary career and technical educator. Additional research is needed to describe what all 50 states are doing in the recruitment, preparation, licensure, and certification of postsecondary career and technical educators. Once these policies and processes are described, the research should be taken a step further, to describe specific programs and practices. Research should be undertaken to examine the impact of the licensure and certification requirements on programs and practices to help build a base of research for programmatic changes. For example, a study could determine relationships between preparation and license requirements and student achievement. Another study could look at preparation and license requirements in relation to quality of instruction.

If it is found that preparation, licensures, and certification are negatively impacting student achievement, then obviously new policies need to be recommended. However, with such a diversity of policies among the states, it would appear that an insufficient research base exists for measuring impact, let alone making any recommendations.

At this time, it is also important to examine the competencies an individual needs to be a successful postsecondary career and technical educator. This examination can develop a common set of standards for the teaching and learning area and subject-specific requirements for the career cluster areas. This type of research could determine which courses are needed, and which are priorities. For instance, a course in educational technology might very useful, but not currently required in some states. In addition, research could be conducted to examine the content and impact of new-teacher preparation programs.

Since many states have a variety of entry levels, it seems important to assess if minimum entrance skills are needed for successful postsecondary career and technical educators. If tied to impact on student achievement, this research could provide support for policy improvements.

Of course, until research is done to evaluate the practices, it is impossible to make policy recommendations. The suggested approaches need to be piloted and evaluated before implications to policy can occur. Another concept described in this paper was the virtual learning environment. Its impact on the licensures, and certification, and preparation of the career and technical educators also needs to be piloted and evaluated.

Job-satisfaction and retention rates of instructors in community and technical colleges who have not received preparation in teaching and learning, vs. the rates for those who have been prepared would be very interesting. Similarly, meaningful behaviors and teaching outcomes for certified, vs. non-certified, postsecondary career and technical educators could be examined—helping address the current and growing shortage of teachers.

IMPLICATIONS FOR POSTSECONDARY CTE

One implication for postsecondary CTE is that if nothing is done, the current uneven practices will continue to place barriers before those individuals who would like to be postsecondary career and technical educators. At minimum, a description of the requirements and how to become a postsecondary career and technical educator in all states is needed.

Another implication for postsecondary CTE faculty and those who determine teacher preparation policies and content is to look at the numerous pathways that bring potential CTE teachers to the field, and design comprehensive assessment tools to determine their preparation needs, and flexible programs to fill them. It is essential for qualified postsecondary CTE faculty to be in the classrooms to transfer career and technical skills to students. The individuals who want to become postsecondary CTE faculty must understand that traditional preparation is not the only method that can be used to prepare individuals to enter the field, and that entrance into the field is happening at a variety of educational levels. Many different paths can be available to become a postsecondary teacher and the requirements differ greatly.

CALL FOR ACTION

Many current practices such as the recruiting, preparation, certification, and licensure of the postsecondary career and technical educator are not supported by empirical evidence. It is critical that researchers examine these areas in more detail. Studies must be conducted that will support programmatic improvements and positively impact policy in the technical and community college. This proposal should be piloted with postsecondary teachers on a voluntary basis, both in a variety of states, and selected locations, to evaluate impact on student achievement.

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